US Army Corps of Engineers
St Paul District

AROUND the ROPE

Mississippi River Headwaters Resevoir Study
Volume 2; Issue #1, January 2004

US Forest Chippewa National Forest

Biodiversity affects the Headwaters Reservoirs

by Steve Clark, biologist, U.S.A.C.E.

The Mississippi Headwaters reservoirs are important natural resources for the organisms that live there and for the people that use and enjoy them. One measure of natural resource quality is biological diversity, commonly referred to as "biodiversity." Biodiversity is the variety of living organisms, their habitats and the processes occurring there.

Unfortunately, biodiversity is declining in freshwater environments all over the world. Some of the known causes are pollution, sedimentation, nutrient runoff and the introduction of exotic species. Another known cause for this decrease is an unnatural hydrologic cycle. The hydrologic cycle is water movement through the atmosphere, over the land surface and through the ground. This factor is directly related to the Headwaters reservoirs and the ROPE Study, because the dams artificially control the flow of water over the land surface.

There are a number of specific ways in which the hydrologic cycle of the Headwaters reservoirs impact biodiversity. Since the mid-1930s, the operation of the Headwaters has been marked by increasingly stable water levels and a shift in the timing of events. Changes in the timing of peak spring reservoir levels and river flows upsets fish spawning activity. By holding water back in the spring for downstream flood control, the river does not receive the high flows necessary for cleansing silt from the spawning habitats of many species, such as walleye. Furthermore, the winter drawdown, which lowers reservoir levels and raises river flows, can negatively impact whitefish spawning and winter habitat for aquatic mammals, turtles, frogs and a variety of other lake and riverine organisms.

Just as important as these effects, possibly more so, are vegetation changes in the reservoirs. Eliminating the larger natural periodic hydrologic events has a major influence on the aquatic vegetation. Under natural

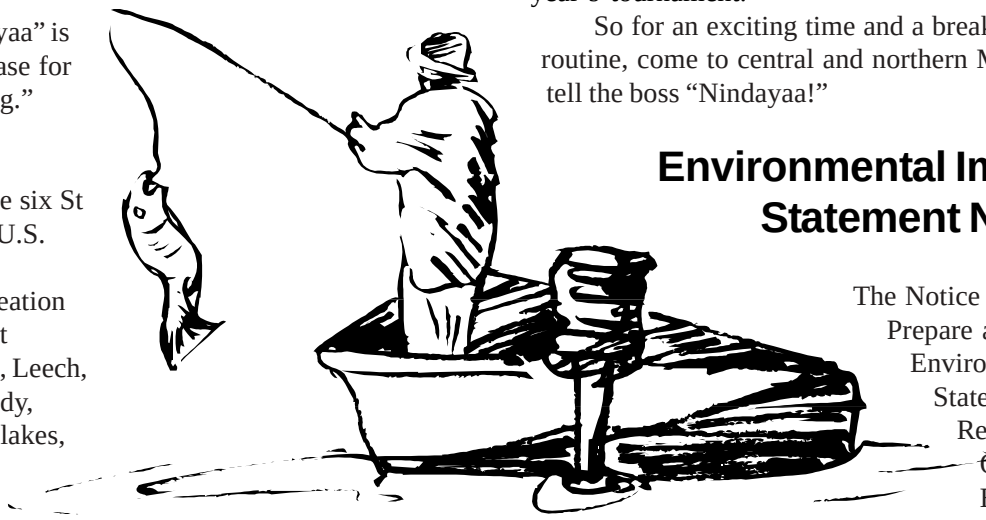
conditions, high water levels would have set back woody vegetation. High water levels would have also increased the extent of emergent vegetation, which is important to waterfowl, aquatic mammals, marsh birds and some fish species, such as northern pike. Low water levels, such as those that would occur during a drought, would increase the area over which emergent and submersed vegetation would grow, thereby increasing the amount of habitat available to fish and other aquatic species. Furthermore, natural variability in water levels would allow a wider variety of plant species to establish, and consequently animal species as well, thereby improving biodiversity.

So, why is biodiversity important? We as people are not separate from nature but, rather, an integral part of it. A collapse in the "natural economy" would result in a collapse of our economy. Imagine what might happen to tourism if the walleye population collapsed in the Headwaters? One often cited reason to preserve biodiversity is the possibility of yet-undiscovered medicines in nature. Biodiversity has even been referred to the wealth of knowledge accumulated in nature during millions of years. Destroying it would be akin to burning the books of a great society. Regardless of why we chose to preserve biodiversity, the ROPE Study provides us with an opportunity to change systemwide reservoir operations to foster biodiversity.

Nindayaa! Nindayaa!

Gregg Struss, park manager, Gull Lake Dam, U.S.A.C.E.

I can tell you are wondering what the heck is Nindayaa "Nin-da-yah." Doesn't this guy know how to spell or is it possibly a dyslectic problem? Well, I can assure you it is neither. "Nindayaa" is the Ojibwa phrase for "I am ice fishing."



In the Headwaters of Minnesota at the six St Paul District – U.S. Army Corps of Engineer's recreation areas, located at Winnibigoshish, Leech, Pokegama, Sandy, Cross and Gull lakes, when winter arrives, ice fishing begins.

In early winter, before freeze-up, fishing for Walleye and other fish can be extremely productive below many of the headwater dams. The peace and tranquility of fishing from the river bank or sitting back in a lawn chair with few to no one else around can be an emotionally up lifting experience; and if you catch a few fish, well, it just doesn't get any better then that!

As the lakes freeze over and the ice thickens, ice fishing hits full speed. It's every person for himself, so man those tip-ups, fishing poles and spears. The major concern is to be safe! Ice thickness can vary from spot to spot on any lake. Always check with resorts and other fisherman, stay on existing roads on the ice and use extreme caution when traveling on frozen lakes.

Fishing tournaments become the rage, as we get deeper into winter on many lakes throughout Minnesota, and the Headwater lakes are no exception. At Winnibigoshish Lake, a Perch fishing contest is held on the south side of the lake in March. Pokegama Lake has a Perch contest at Tioga Landing, also in March. Leech Lake has the famous Eel Pout Festival that will be celebrating its 25th year on Feb. 13-15, with an expected attendance of 7,000 people.

The grand daddy of all fishing tournaments is held every year on Gull Lake, and this year will be no exception. The Brainerd Jaycees $150,000 Ice Fishing Extravaganza is the biggest ice fishing tournament in the world with 70 percent of the proceeds going to the Confidence Learning Center. The center is a nonprofit camp for people of all ages with developmental disabilities and provides an outdoors experience that can be enjoyed with family and friends. This year will mark the 14th annual tournament and will be held on Jan. 17. More than 10,000 participants will compete for a new Ford Truck, $10,000 in cash and many prizes. People from 27 states and five different countries attended last year's tournament.

So for an exciting time and a break from the routine, come to central and northern Minnesota. Just tell the boss "Nindayaa!"

Environmental Impact Statement News

The Notice of Intent to Prepare an Environmental Impact Statement for the Reservoir Operating Plan Evaluation study was published in the *Federal Register* on Dec. 12, 2003. The EIS is a requirement of federal environmental law and is used to show how projects effect the environment. The Notice of Intent officially starts the EIS scoping process.

The EIS scoping process involves the participation of federal, state and local agencies; Indian tribes; and the general public. The most important aspect of scoping is the identification of relevant and significant issues that will be analyzed in depth.

Questions about the proposed EIS should be addressed to: Col. Robert L. Ball, District Engineer, St. Paul District, Corps of Engineers, ATTN: Mr. Terry J. Birkenstock; Chief, Environmental and Economic Analysis Branch; 190 Fifth St. E., St. Paul, MN 55101-1638, or email: terry.j.Birkenstock@usace.army.mil.

The Headwater Dams and the Ojibwe of Minnesota

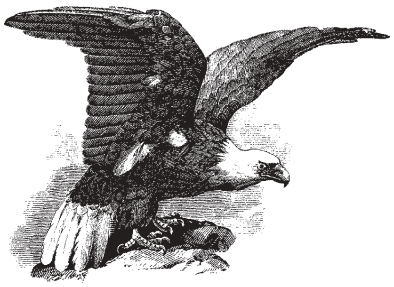
by Jane Carroll, historian, U.S.A.C.E., and Matt Pearcy, historian, U.S.A.C.E.

Shaped in the retreat of the last Ice Age, the Minnesota landscape is marked by countless lakes, ponds and bogs that feed into three major North American watersheds and give rise to the "Mighty Mississippi" River, the nation's most important natural highway. The Mississippi flows north out of Lake Itasca in the

Headwater region of north central Minnesota before plunging east and then south along a path that carries it through the agricultural heartland of the United States to the Gulf of Mexico. But, the Headwaters no longer constitute a natural river system. In 1880, Congress directed the U.S. Army Corps of Engineers to construct a series of reservoirs along the remote upper reaches of the Headwaters to help regulate river flow below Minneapolis and St. Paul, Minn.

The history of the headwater dams dates to 1880, when Congress approved a plan to construct an experimental dam and reservoir at Lake Winnibigoshish. Since 1850, the Corps of Engineers, as well as private commercial interests, had been investigating the feasibility of damming the Headwaters in order to regulate flow of the river downstream. The millers and other users of waterpower in Minneapolis were especially eager to have a constant flow over St. Anthony Falls during low water periods. Additionally, the city of Minneapolis enthusiastically supported the idea, envisioning itself as the seat of navigation for a new and burgeoning river traffic between the Falls of St. Anthony and the northern Minnesota frontier. City residents gave little thought to the effects of their plans on Native Americans of the region.

In 1880, the Ojibwe of Minnesota resided on reservations scattered across the northern half of the state. The major lakes that comprised the headwaters of the Mississippi — Winnibigoshish, Leech, Pokegama, Sandy and Gull — had been the sites of Ojibwe villages since the early 1700s. These waters had also provided the primary means of subsistence for the headwaters bands, whose culture was intimately bound to the lakes and their associated resources. The bands' yearly cycle revolved around seasonal variations in the bounty provided by the lakes and surrounding woods. In early spring, the women gathered maple sap, while the men hunted. In the late spring, they planted corn and potatoes. During the summer, people fished, picked berries, collected birch bark for canoes and wigwams, maintained their gardens and wove mats from lake rushes. In late summer, they harvested and processed wild rice. In the fall, band members picked and dried cranberries; and during the winter, the men left the villages to hunt and trap.



The indigenous wild rice provided the Ojibwe with one of their principle staples. To the Ojibwe, the grain also possessed religious significance; they employed it as a ceremonial and ritual food, as well as for medicinal purposes, and made wild rice the subject of their legends. The location, as well as the existence, of these water resources was integral to the Ojibwe culture. The reservoirs created by the federal government permanently altered the landscape around the headwaters and destroyed a significant portion of the bands' means of subsistence.

In the first half of the 20th Century, the Corps of Engineer's policy in maintaining the Mississippi Headwaters reservoirs remained primarily one of facilitating navigation on the Upper Mississippi River. Consequently, the question of damages to Ojibwe land and resources resulting from the construction and maintenance of the dams was not of major concern. Once the locks and dams on the Mississippi abrogated that navigational role of the reservoirs, however, the policy changed. Since World War II, the Corps has become increasingly attentive to the effects of reservoir levels on Ojibwe lands and resources. Today, it attempts to manage the headwaters reservoirs to enhance wild rice production, fish and game habitat and recreation.

Oops…

In the November 2003 issue of "Around the ROPE," the picture of the dam was labeled as Gull Lake Dam, it is actually Pine River Dam.

Fascinating Fact

If three inches of rain fell equally over the drainage area of the six Headwater reservoirs, there would be enough water to completely fill Lake Winnibigoshish, assuming the lake was empty. In addition, there would still be more than 8.4 billion gallons of water remaining, enough to fill Gull Lake nearly half way.

How to Get More Information

ROPE Contact Information

You can become involved in this study. You can volunteer to be a member of a lake group or just take some time to learn more about the operations of the Headwaters dams by visiting the ROPE website. For more information, please use the following contact information.

Website:http://www.mvp.usace.army.mil/finder/display.asp?pageid=143

Newsletter:

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Gull Lake Dam	218-829-2797
Pokegama & Winnibigoshish Dams	218-326-6128
Knutson Dam	218-335-8651
Stump Lake Dam	218-751-3120

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Return Service Requested

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